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A Picture Is Worth A Thousand Words: The Use Of Videos In Vocabulary Acquisition

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Abstract

The objective of this study is to analyze to what extent it is better to use audiovisual material than listening materials for vocabulary development. In fact, it seeks for evidence on whether students retain more vocabulary after the double coding input of audiovisual resources or after having only-audio input; and whether retention rate of the vocabulary is similar in both conditions in immediate and delayed post-tests. The impact of the recognition method, written words vs. images, will also be taken into consideration. The participants in the study were a group of 16 high school students, age 13-14. The material used to test vocabulary retention was a piece of news in an audiovisual format, a video clip, and in an only-audio format, a recorded fragment. The instruments used in the project were a pre-test, in order to create a corpus of unknown vocabulary items, and a post-test with the words selected in which students had to match the words with their translation in some cases and with images in others. An immediate and two delayed (2 weeks and 4 weeks) administrations of the same post-test served to analyze retention rates.

Introduction

The use of videos in English Foreign Language (EFL) classes is becoming more and more common and the value of audiovisual materials in order to enhance the instruction of foreign languages has been highlighted by many scholars (Canning-Wilson, 2000; Jones, 2004; Hai-peng & Li-jing, 2007). In the past, video material was very limited and it was not an easy task to find useful material, which would serve as support for teaching specific aspects of language, to complement teachers' instruction in the EFL classroom.

However, the 21st century has yielded many advances with respect to technology. Varied multimedia material has been developed and designed to be introduced into the classroom. Within this new spectrum of instructional aids, Internet has become the core

of such technological progress. Thanks to the globalization and accessibility of information, practitioners can access an immense amount of resources that can be used in their everyday teaching in order to make students' learning more effective.

During the last decades, researchers have been studying the use of multimedia support in L2 instruction (Bagui, 1998; Baltova, 1994; Canning-Wilson, 2000; Hai-peng & Li-jing, 2007; Jones, 2003, 2004). Although there are many studies that have investigated the effects of multimedia in the classroom, few of them have focused on particular areas of language. Consequently, specific research on how multimedia affects particular areas of language acquisition is needed because it is convenient to study whether one type of instruction is better than another in certain contexts in order to see how learning can be improved or enhanced. Therefore, in this article, we are going to analyze the effectiveness of videos to learn vocabulary in listening activities.

This paper begins with an overview of the theoretical background of L2 instruction supported by multimedia materials. Then, our research questions are presented and the method used to carry out the study. Later, the results are analyzed and answers are provided for the questions of the project. Finally, conclusions are drawn and further study areas proposed.

Theoretical Background

Multimedia Instruction

Since the boom of Internet, much research has been done on the use of multimedia as an educational support for teachers' instruction. According to Jones (2004) language comprehension activities have evolved from a pure audio-only support to a multi-sensory one. Now, students of foreign languages can experience more authentic audio passages by adding images to the audio so that listening tasks become closer to

real life listening situations, in which images and movement are usually present, in the form of videos, interactive multimedia material or CD-ROMs. The new tendency to introduce audiovisual material provides learners with more concrete information and annotations that help vocabulary processing and acquisition to be more effective.

A study carried out by Canning-Wilson (2000) on the practical aspects of using videos in foreign language instruction showed that audiovisual aids enhance the information that students of foreign languages receive. Using video, students receive the message through two different channels; on the one hand, through the oral channel as the information is provided through words; and on the other, through the visual channel due to the information that the images offer. Improvements in learning through multimedia resources happened due to such dual-coding (dual channel input). The effectiveness of multimedia in the teaching scope was mainly attributed to its similarities in structure to the information processing theory, which postulates (Treichler, 1967) that people generally remember 10% of what they read, 20% of what they hear, 30% of what they see, and 50% of what they hear and see at a time. Therefore, dual-coding helps the retention of information because the processing takes place through two generally independent channels at the same time. Furthermore, it has an extra effect since the learner creates more cognitive paths, which can be followed to retrieve information. Those cognitive paths become a schema (pattern) that puts less pressure or load on the working memory, and thus it facilitates understanding (Bagui, 1998). Canning-Wilson (2000) stated that images create a context for what is being said and gestures and visualized words make students' understanding more successful. Indeed, in multimedia environments, spoken utterances are backed up by visual aids (Baltova, 1994). Finally, Najjar (1996) suggested that different information has to be coded in different media in order to be the most effective for people to learn.

Multimedia goes beyond double-channel input, since the perception of the message is multiplied by the number of ways through which that information is delivered to the user. So, the more channels involved in the instructional process the better students learn.

Other researchers (Jones, 2003) discovered that when a written or spoken passage is not clear in the context where it is emitted, deeper processing of the information might fail to support students learning and that might produce the incorrect learning of words. Thus, multiple-channel support can be crucial in those situations to help students understand successfully.

At a conference in 2000, Canning-Wilson claimed that "more importantly, video can be used to help distinguish items on a listening comprehension test, aid in the role of recall, help to sequence events, as well as be adapted, edited or changed in order to meet the needs of the language learner". Thus, visual support not only helps students' understanding, perception and acquisition of new information, but also its retention and recalling. Therefore, one of the purposes of this article was to analyze whether using videos affects vocabulary retention and recognition immediately, 2 weeks and four weeks after the instruction.

Visual support enhances students' learning, but some characteristics should be taken into account to make the most of this type of material: materials should contain descriptive pictures; they should illustrate the target language; distracters should be avoided; when available, authentic material should be used; and finally, short video fragments should be used to avoid loss of attention.

So far, much research has been done on L2 instruction with multimedia support in University context, but very little in high schools. Therefore, this study aims to see whether the same results are applicable to high school students of EFL.

Vocabulary Learning

Multimedia technologies' application in teaching makes it possible to enhance and facilitate students' comprehension, and at the same time, it can also improve student's vocabulary learning.

For many years, it was believed that vocabulary learning merely involved memorizing and monotonous practicing. It was an individual task students should do on their own. However, the use of communicative strategies suggests that other factors also take part in the process of vocabulary acquisition and usage. In fact, "incidental vocabulary learning occurs when students acquire vocabulary while reading or listening for comprehension rather than focusing solely on memorizing list of words" (Jones, 2004, p. 123). A study by Hai-peng and Li-jing (2007) on vocabulary acquisition in a multimedia environment showed the benefits derived from the use of multimedia support in the instruction of vocabulary. They found that thanks to multimedia resources, "learners respond to multimedia in a complex way and give the feeling of experiencing information instead of simply acquiring it." (p. 56). That is, students see the actual use of the language, in a real context and in a natural way, and besides, "students feel more fun from multimedia, and learning becomes a happy process" (p. 56). So, multimedia also improves students' motivation towards vocabulary learning. B Jones (2003) proved that double-channel input was more effective both, in quantitative and qualitative terms. Her quantitative results showed that students with visual input experienced more incidental learning than those without visual input. "When both visual and verbal annotations were present, students' performance was highest, and the difference to students with verbal annotations available was statistically significant" (p. 55). In the qualitative field, students provided a more supportive view of the helpfulness of multiple modes, images, and interaction for aural comprehension. "They believed

that pictures demanded deeper processing" (p.124). Jones (2004), based on Kellogg & Howe suggestions (1971), proved that foreign words associated with visual imagery or actual objects were learned more easily than without such comprehension aids. And for the retrieval of the newly-learned words, she concluded that students from the visual and verbal group could select from and make two and even three connections between the verbal, visual, and aural mental representations to help them build the meaning of those words.

Some relevant themes emerged in that study including the helpfulness of interaction with annotations, the supportive nature of multimodal materials for vocabulary acquisition, as well as students' beliefs concerning the amount of invested mental effort (Salomon, 1983) needed to process verbal or visual annotations. Such effort, however, could be lightened by multimedia instruction. "Vocabulary acquisition under multi-media environment can improve the vocabulary teaching efficiency and extend students' vocabulary." (Hai-Peng & Li-Jing, 2007, p. 59).

Even though research seems to have proved the effectiveness of multimedia materials in vocabulary acquisition concentrating on reading activities, a notable exception is Jones' study that focused on the effect of multimedia input in listening activities. Our work follows her research and aims to find out whether vocabulary acquisition is also improved when multimedia support is used in listening activities.

Vocabulary Recognition

Recognition and recall tests are two different forms of testing and demand separate processing strategies. Recognition tests usually consist on multiple choice activities where learners have to select or guess the correct answer from the options given; however, recall tests demand the production from memory of the correct translation of a

list of words given. It is, thus, more difficult than recognition because learners must search for the correct option within their mental representation of the vocabulary item (Jones, 2004). Recognition is the testing method that has been used in the present study because our goal was to analyze vocabulary passive acquisition first, as productive vocabulary should be the next step and may be affected by many ore variables tan simply kind of input.

Many researchers have investigated the use of pictorial and written annotations when testing either reading or listening comprehension in L2. Research has shown that students who have access to pictorial and written annotations in written production tests outperform those who do not have access to pictorial annotations because the combination allows for more than one retrieval route to the information in long term memory (Jones, 2004).

Jones (2004) also predicted that "students with access to pictorial and written annotations during a L2 listening comprehension activity would [later] recognize more written translations and pictorial representations of keywords on written vocabulary recognition posttests" (p.133). Although every group performed equally well in the first post-test regardless of the kind of annotations (written only, written and pictorial, or no annotation); in general, the group who did not have any kind of support performed the poorest because the difficulty of the aural text prevented students from creating enough contextual knowledge, and, therefore, they had less ability to understand and learn the vocabulary. Students who had access to pictorial and written support acquired better and more consistently the vocabulary items, and additionally, they could establish direct connections between the L1 and L2 vocabulary and the corresponding images. Many other researchers (Baggett, 1989; Kozma, 1991; Oxford & Crookall, 1990) also

advocated that images carry a structural message that complements the language presented and that the pictorial mode facilitates vocabulary learning.

Therefore, our study wants to contribute to this path of research to make findings in this area more consistent.

Research Questions

In the present study, we will analyze how audiovisual materials support vocabulary instruction in English Foreign Language (EFL) classrooms in Spanish high schools. On the basis of the theoretical background presented above, the following research questions were formulated:

1. Do students perform better in vocabulary post-tests with visual and audio input or with only-audio input?
2. Is vocabulary retention enhanced when audiovisual materials have been used in the short-, medium- and long-term?
3. Are images better than words for vocabulary retrieval?

Method

Context

This piece of research was done in Jaso Ikastola. It is a semi-private school that belongs to the *Euskal Herriko Ikastolen Elkartea* (the association of Basque private schools of the Basque Country) and it is located in a neighborhood called Mendebaldea, in Iruña. It was created as a social initiative in 1980 and it is a cooperative managed by students' parents. This school is a "Public Private Partnership", i.e., it is a private school which

receives money from public funds. Jaso gathers students from the city as well as from the surrounding areas. Currently, there are around 700 students.

Its main goal is to provide students with an integral and multilingual education. Students start in pre-school at the age of 2 and leave at the age of 16, when they finish Compulsory Secondary Education. It is a D model school, therefore, Basque is the principal (or vehicular) language used there. However, Jaso follows an innovative and particular curriculum.

Jaso Ikastola, together with other schools within the *Euskal Herriko Ikastolen Elkartea,* takes part in a European project to establish a multilingual model of education introducing English since the early stages of education, at the age of 4. Such project receives the financial support of the European Commission's Socrates Program (Lingua Action D). For this purpose, original materials have been created and developed in English and translated and adapted into Dutch, Italian, Irish, and subsequently piloted in secondary schools in eight European countries.

The school has three different multilingual projects: *Euskaraz bizi, Eleanitz English* and *Eleanitz Français.*

Jaso Ikastola promotes English from the very beginning of education. Students have two hours and a half of English instruction per week until they reach Primary Education; then, in Primary Education, they study English 3 hours per week, and finally in Secondary Education, one more hour per week is added to their timetables. Moreover, in 3rd and 4th of Compulsory Secondary Education, Geography and Social Sciences, respectively, are taught in English, i. e., English becomes the medium of instruction.

Participants

This study was carried out with a group of 16 students in 2nd year of Compulsory Secondary Education. Most of them were 13-14 years old and had been studying English for longer than students in other schools taking into consideration the aforementioned multilingual projects developed by Jaso Ikastola. Thus, students at the age of 14 in this center had a higher level of English than other students of the same age. In fact, according to the teachers' criterion, students had an average B1 level of English based on the European Common Framework of Reference. Such characteristic was beneficial for the study because it was possible to use an authentic piece of news as one of the instruments.

The real amount of students in the class was 26 but some of them had an exam resit at the same time and thus they were not included in this experiment. The group was split into two different sub-groups, the experimental group (from now on group A) and the control group (from now on group B). Group A consisted, originally, of 9 students and B of 8. However, as one of the students from A could not take the second post-test, her results have not been taken into consideration. Thus, both groups had the same number of subjects, 8.

Instruments

The tools used to carry out the study were a video and an audio fragment[1], a pre-test and a post-test.

Firstly, the video clip was chosen. It was a piece of news about banning fast-food in the UK. It was chosen in relation to the topic students were seeing in class at that moment. The video included audio, the images of the film and several written annotations.

[1] The audio was extracted from the video clip.

Secondly, a pre-test based on the video clip was designed in order to create a corpus of unknown vocabulary items that would be instructed. The pre-test consisted of a text, which was a piece of news containing some of the vocabulary that appeared on the video from which the words that were unknown to every student would be extracted in order to be taught and tested afterwards.

Finally, the post-test was designed. It consisted of a box with the vocabulary items and students were asked to match the original word in some cases with its translation and in other cases with an image that was provided in order to test whether retrieval was promoted better with words or images. Both channels of information (words and images) were used. Extra help was given by indicating the category (verbs [v] or nouns [n]) of words.

Procedure

In session one, the pre-test was administered. As students did not underline enough words to have a corpus, the researcher noted down on the blackboard words from the text which were considered unknown to the students and students had to write the translation, a synonym or they had to explain the meaning of those words. This way, a vocabulary corpus of words unknown to all students was created.

In session two, two weeks after the pre-test activity was administered, the group was split into two groups: 8 students in group A, and 8 in B. For the treatment, a news video about doctors' calling for a ban on fast food in the UK was used. This video was related with the unit students were seeing, which was “Teenage Health”. Group A watched the video twice, whereas group B listened to the isolated audio from the piece of news an equal number of times. Then, the new vocabulary items that appeared on the news were introduced and explained to all students. After the instruction, the group was split again

and the groups were played their respective fragments twice again. Finally, students from both groups were gathered together in the classroom and the post-test was administered to them immediately after the treatment. Students took the same post-test two more times at intervals (after two weeks and after four weeks).

Data Analysis

The three post-tests were corrected and analyzed to obtain the data. The first values obtained from the post-tests were the raw correct answers of the students in every post-test. Then, the results were introduced into the SPSS program and analyzed in order to see statistically significant differences in the data with one-way analysis of variance (ANOVA).

The results were compared, firstly, according to the method of instruction, i.e., video or audio. Retention rate was examined next, by analyzing the results of the three post-tests, which were compared, first all together and then group by group, to see to what extent it was due to the method that students retained more vocabulary items and to see which methodology benefited more retention and recognition in the long-term. Finally, to respond to the third research question, the answers were analyzed according to the type of annotation used in the recognition tests, images or words.

Results and Discussion

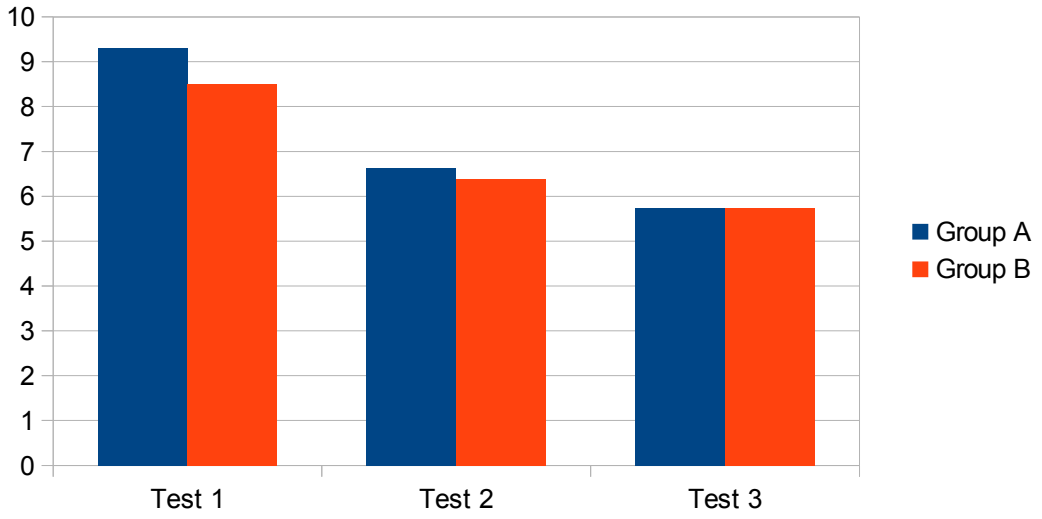
Table 1: General results

Post-tests	Results
Test 1	8.81
Test 2	6.5
Test 3	5.75

In general, regardless of the method of instruction used during the sessions, students obtained better results immediately after the instruction was given. The longer the lapse of time between the post-test administration and the instruction, the fewer words students recognized. So, in both groups there was a general tendency to forget words as time went by. Moreover, the differences in word recognition rate on the post-tests were significant (test 1 vs. post-test 2 [t= 5.201, p= .000]; post-test 2 vs. post-test 3 [t= 2.423, p= .029]; post-test 1 vs. post-test 3 [t= 5.210, p= .000]).

Regarding the type of instruction used in each group, the study found differences between the performance of the experimental and the control group (see Figure 2).

Figure 2: Average results (groups)



In the first post-test the biggest difference was found between group A and B (9.13, vs. 8.50), although the difference was not statistically significant.. However, that difference tended to decrease after two weeks, as the second post-test showed (6.63, vs. 6.38). Eventually, in the last post-test, the difference was nonexistent. Both groups scored equally (5.75). Therefore, the answer to the first research question should be that

students perform better when visual support is provided but only immediately after the instruction. Our results support the dual-coding input theory as the experimental group's higher scores in the immediate post-test show that students in this group retained more information immediately after the instruction. Students received the information through three different channels (visual, audio and, in some cases, written) and besides, they created a connection among the words, the concept and the images from the video fragment. This finding supports previous research and seems to prove that "visual information simply carries more information than does text and allows for greater comprehension and retention. When we examine the recall protocol measures, students who accessed visual annotations understood and retained their knowledge of the passage best because the dense/deep quality of images allowed residual memory to remain." (Jones, 2004, p. 134). Moreover, this superior recalling immediately after multimedia support seems to back up the fact that retrieving words is more difficult than "inputting" them and that multiple annotation types, rather than single mode annotations, can facilitate this process since "the organization and integration of two different forms of mental representations enhance retrieval performance by providing multiple retrieval cues" (Plass et al., 1998, p. 34).

The second research question inquired about whether the retention rate would be higher when audio was complemented with visual support during the sessions.

As we have already stated, in both groups students tended to forget words as time elapsed and the word-loss rate was significantly different between post-tests 1 and 2 ($t= 4.396$, $p= .017$) and 1 and 3 ($t= 5.940$, $p= .017$) in group A. However, the comparison between post-tests 2 and 3 was not significant for this group ($t= 2.173$, $p= .155$). The same statistical pattern was found for group B. There was a statistically significant

difference between the groups' results in post-test 1 and 2 (t= 3.167, p= .002) and 1 and 3 (t= 3.994, p= .001), but not between post-test 2 and 3 (t= 1.391, p= .095).

Consequently, we must recognize that instruction with audiovisual support seems to be more effective only in the short term because the tendency in both groups was to experience a decrease in scores in the delayed post-tests. Furthermore, even though group A outperformed group B in the immediate and in the 2 weeks post-tests, final scores in the 4 weeks post-test were equal.

Thus, the results showed that in both cases, the vocabulary retained after 2 and 4 weeks decreased and students in audiovisual conditions also tended to forget the vocabulary they had previously learned. In fact, the loss was greater in the experimental group as in the 4 weeks delayed post-test, no difference was found in scores between both conditions, audio-only input and audio and visual input. So it could be concluded not only that the audio and visual input does not contribute to the transfer of information to long-term memory more than audio-only input, but also that the loss was bigger compared to only-audio input . There are two possible explanations for that.

First, that students in the experimental group “worked in an automatic manner, in which little conscious effort was utilized and experience with the material was fast and effortless, and therefore learned less” (Cohen, 1987, p. 45). The subjects in our study may have employed less mental resources to understand the piece of news because images lessened the load of audio, while the control group should have needed more mental resources and attention to comprehend the only-audio input. Besides, according to Jones (2003), students’ views of the easy or difficult nature of annotations determines the amount of invested mental effort students apply to a given task. “The amount of mental effort students invest in learning is influenced by how they perceive the source

of the information. That is, if they perceive that a given task is difficult, they will use more mental effort and therefore more nonautomatic energy to process the material. If they perceive that a given task is easy, they will invest less mental effort and may potentially learn or retain less as a result" (Jones, 2003, p. 57-58). Cennamo (1993) also found that learners' perception of television as an easy medium actually interfered with their ability to learn from it. And Salomon (1984) stated that when learners perceived television to be easier than print, or audio-only material in our case, they invested less mental effort in learning from television and therefore learned less. So, in short, "the rate of forgetting [was] thus a function of the lack of depth and analysis" (Cohen, 1987, p. 45).

Consequently, our results seem to support this view as subjects in the audiovisual environment tended to forget a greater amount of vocabulary items than students in only-audio conditions.

The second possible explanation, and totally opposed to the previous one, for this lack of long term superior retention rates has also been put forward by previous researchers on the topic (Jones, 2004, Baggett, 1989) who argued that sometimes multimedia materials deliver too much information for students to process, so the brain is making such efforts to process every piece of information that finally the information is not acquired properly. Baggett (1989) also argued in favor of this overload of information stating that:

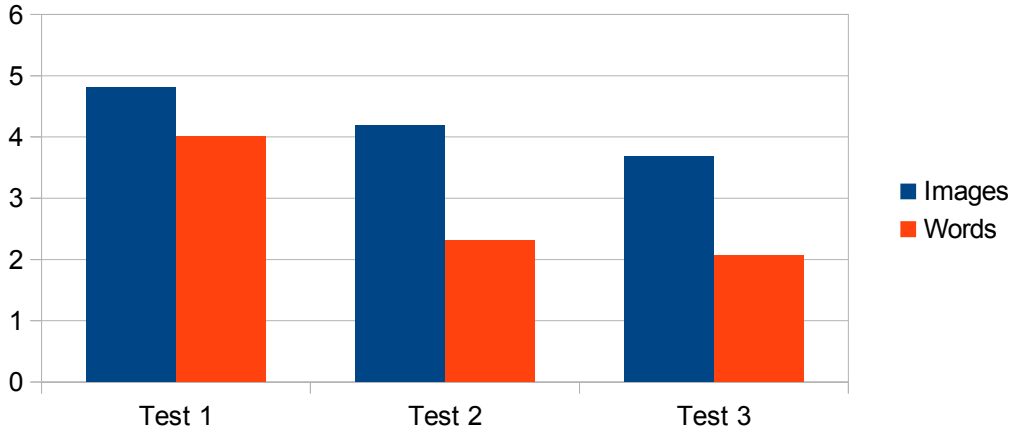
> "There are more connections in the memory representation when the input is visual. "Brown leaf" presented verbally creates the instance of "leaf" connected with the concept "brown". But showing a picture of brown leaf causes one to create the concept of leaf connected with concepts of brown,

olive, rust, burgundy, etc…, not to mention its shape, size, environment, etc. In the verbal presentation there is one sure connection: leaf with brown." (p. 119).

On the contrary, the control group students were administered the same information but through a single channel. That might have helped them because the effort to process was inferior so attention could be more focused and, therefore, even though students remembered fewer items immediately, those items seemed to be retrieved more consistently. Consequently, it seems plausible to think that the vocabulary items they learned were successfully transferred to the long-term memory, as the difference between the immediate post-test and the final post-test results for this group was considerably smaller than the difference experienced by the experimental group.

Regarding the third question about whether images would be better than words in retrieving vocabulary, in general, the results showed that students recognized more vocabulary items when images were provided than when a translation was provided in the post-test.

Figure 3: General results (annotations)



In post-test 1, students recognized more images than words (4.81 vs. 4). In post-test 2, the difference broadened (4.19 vs. 2.31) and, eventually, in the 4 weeks delayed post-tests, the difference decreased a little bit, but it was still prominent (3.69 vs. 2.06). Besides, the difference between each annotation type was found to be statistically significant in every post-test (post-test 1 [t= 2.282, p= .038]; post-test 2 [t= 3.529, p= . 003]; post-test 3 [t= 4.333, p= .001]), and more significant in the most delayed post-test.

The biggest rate of loss in the association between translations and words should also be pointed out. As time elapsed, students tended to recognize fewer words when they were linked to its translation (written annotation) than to an image (visual annotation). In fact, from post-test 1 to post-test 2, students' retrieval of written annotations was reduced almost to half (post-test 1 [4], post-test 2 [2.31]); whereas the decrease in image recognition was smaller (post-test 1 [4.81], post-test 2 [4.19]).

Within the groups, there was a significant difference in group A between the annotation types in each of the three post-tests in favor of images (post-test 1 [t= 3.862, p= .006]; post-test 2 [t= 2.762, p= .028]; post-test 3 [t= 3.742, p= .007]). In group B, except in the first post-test, students performed significantly better with images too (post-test 1 [t= 1.070, p= .320]; post-test 2 [t= 2.517, p= .040]; post-test 3 [t= 2.376, p= .049]).

The underlying reason for these results may be that the information supported by images seems to be more consistently retrieved than the information supported by words. The connection seems to be stronger when students are given a word and an image of that word than when students are given a word and its translation because the mental representation of the word is stronger when it is linked to images than to a translation under both conditions, audiovisual and only-audio conditions. This idea was firstly supported by a pioneer of the field, Omaggio, in 1979, and ever since, many other researchers have found the positive effects of visual imagery on L2 vocabulary

recognition and learning. Oxford and Crookall (1990) explained that "most learners are capable of associating new information to concepts in memory by means of meaningful visual images, and that visual images make learning more efficient. (…) Moreover, the pictorial-verbal combination involves many parts of the brain, thus providing greater cognitive power" (p. 17). The binding of form (unknown L2 vocabulary) to meaning (visual representations) is the most effective way for learners to acquire concrete ideas and references. Texts are symbolic representations of information which are processed sequentially, whereas pictures are analog representations of information which may be mapped directly onto the mental model. This is due to the fact that both visual images and the mental model represent content matter in the same fashion, i.e., both utilize analogies (Chun and Plass, 1997). So, in short, the effectiveness of images for retrieving the meaning of the L2 words may lie in the fact that the image and the mental representation of the word are coded in the same language (analog).

Conclusion and Future Research

One limitation of this research may be the number of participants. Due to external factors such as resit exams and Easter Holidays, it was impossible to modify and postpone the sessions needed in order to have a wider sample of students. It would have been a more complete and exhaustive piece of research if a third group had been added with no annotations at all, only the instruction. That should be considered in future research.

The analyzed data showed that using audiovisual materials instead of the regular only-audio listening was more effective in terms of vocabulary retention immediately after exposure. Nevertheless, the effect of this kind of input is not sustained in time since both, experimental and control group, did equally well in the 4 weeks delayed post-test.

Vocabulary recognition results with pictorial vs. written annotations seemed to point to the superior nature of images for word recognition. Students from both groups recognized better the original English words with images than with translations. Therefore, the theory about dual-coding is supported by this study. It seems to be easier to retain and recognize an item when a connection is made among the word, the aural mental representation and the L1 word. Therefore, our findings suggest that pictorial representations of words make it easier to recognize the concept, not only for students who have received instruction with images but also for students who have received no such visual input, but nevertheless, appear to have created their own mental representations which may correspond to the pictures in the post-test.

Whether this greater recognition is sustained in the long term when there is only one type of annotation remains a question for further research. Researchers should explore if testing students with picture-only or word-only post-tests in different occasions produce the same results as when both types of annotations are present in the same test.

Finally, this study has been based on vocabulary recognition activities, but further investigation could also be carried out in order to see whether these results can also be applied to recalling activities, which demand the production of the responses instead of making students retrieve their knowledge from images or translations given.

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Anexes

Pre-test

Tax fizzy drinks and ban junk food ads, say doctors

The Academy of Medical Royal Colleges, which represents nearly every doctor in the UK, has come up with a campaign against unhealthy food in order to cope with obesity.

According to doctors, the UK is one of the most obese nations in the world with about a quarter of adults classed as obese, and they point out that apparently such figure will continue rising very fast unless they find the root cause of the problem.

The Academy has proposed some measures to address the problem, such as banning fast food outlets in schools and leisure centers, increasing taxes in sugary drinks, banning junk food advertising until children's bed time, increasing funding for weight management services or supporting parents to create a healthy environment at home. However, many sectors reject these suggestions.

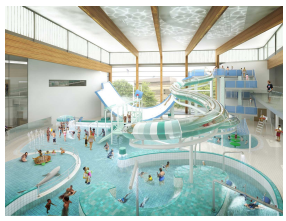
This is not the first time the UK does an effort to find a solution to obesity. Some years ago, they released and advertising campaign that aimed to encourage children to become healthier.

Source: http://www.bbc.co.uk/news/health-21478314 (adapted).

Post-test

Write the words of the box next to their corresponding translation(s) or image:

FUNDING (n)	BAN (v)	REJECT (v)	SUPPORT (v)
POINT OUT (v)	COME UP WITH (v)	FIGURE (n)	OUTLET (n)
ENCORAGE (v)	ADDRESS (v)	AIM (v)	TAX (n)
RELEASE (v)	LEISURE CENTER (n)	ROOT (n)	

1. NABARMENDU, AZPIMARRATU
2. 
3. ZERGA
4. 
5. UKATU, EZ ONARTU
6. 
7. FINANTZIAZIOA
8. 

9. HELBURUA IZAN, NAHI IZAN
10. 
11. ZERBAIT EGITERA ANIMATU
12. 
13. ZERBAITETAZ ARDURATU, MANEIATU
14. 
15. ATERA, KALERATU, PUBLIKATU